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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WANG, ALBERT C

ART UNIT	PAPER NUMBER
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2115

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,012

Applicant(s)

GOUD ET AL.

Examiner

Albert Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 13-20 and 30-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 13-20 and 30-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office action is responsive to the amendment filed 21 August 2006.
2. Independent claim 1 has been amended to incorporate the subject matter of now cancelled claim 12 (not claim 9 as stated in the Applicant's remarks) without incorporating the entire subject matter of intervening dependent claims 6 and 7. Independent claim 1, as amended, includes the new limitation "using one or more network protocol offload engines", which is not present in original claims 6, 7, or 12. Independent claim 14 has also been amended to include this new limitation. Independent claim 32 is new.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto et al., U.S. Pub. No. 2006/0031668 ("Miyamoto"), in view of Boyd et al., U.S. Pub. No. 2004/0049600 ("Boyd").

As per claim 1, Miyamoto teaches a method, comprising:

receiving a plurality of data packets by a processing system via a network during a pre-boot runtime of the processing system, each of the plurality of data packets containing one of a corresponding plurality of data segments of a boot agent and a boot image (par. 0021, data packets are inherently sent over digital networks; pars. 0035-0036, ActiveOS or OpBoot downloaded from managing server; pars. 0037 & 0043, disk image downloaded from managing server);

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parsing the plurality of data packets using a network protocol stack to receive the boot agent and the boot image during the pre-boot runtime, a portion of the network protocol stack executed in a hardware entity of the processing system (pars. 0061-0064, using UDP/IP or other protocol stack);

transferring the boot agent and the boot image into system memory of the processing system during the pre-boot runtime (pars. 0026 & 0037, ActiveOS and disk image preferably stored in system memory);

executing the boot agent (pars. 0030-0031);

branching into the boot image from the boot agent to initialize an operating system embedded within the boot image (pars. 0039 & 0043); and

executing the operating system (pars. 0044 & 0049).

While Miyamoto teaches executing a network protocol stack on resources such as a network card without loading the communication protocol onto the motherboard (pars. 0064-0067), Miyamoto does not expressly describe this as using one or more protocol offload engines. Boyd teaches using one or more protocol offload engines to relieve processor and memory resources (pars. 0006-0007). Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art that using one or more protocol offload engines is applicable to Miyamoto as a means to free processor resources.

As per claim 2, Boyd teaches transferring data segments directly into system memory via RDMA (par. 0007).

As per claims 3 and 4, Boyd teaches using a TCP/IP Offload Engine (par. 0007).

As per claim 5, Miyamoto teaches executing UDP/IP in the hardware entity (par. 0062)

As per claim 6, Boyd teaches pre-posting a buffer in the system memory of the processing system prior to receiving a first one of the plurality of data segments, the buffer having a size corresponding to a data block (pars. 0113 & 0114).

As per claim 7, Miyamoto teaches the boot agent contains instructions for the processing system to execute to determine what to do with the boot image (pars. 0039 & 0043).

As per claim 13, Miyamoto teaches a network interface card (par. 0062). Boyd teaches an offload engine on an I/O adapter (pars. 0036, 0044 & 0054).

5. Claims 14-20 and 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto et al., U.S. Pub. No. 2006/0031668 ("Miyamoto"), in view of Boyd et al., U.S. Pub. No. 2004/0049600 ("Boyd"), and French et al., U.S. Patent No. 6,988,193 ("French").

As per claim 14, Miyamoto teaches a machine-accessible medium that provides instructions that, if executed by a machine, will cause the machine to perform operations comprising:

receiving a plurality of data packets by a processing system via a network, each of the plurality of data packets containing one of a corresponding plurality of data segments of a boot agent and a boot image (par. 0021, data packets are inherently sent over digital networks; pars. 0035-0036, ActiveOS or OpBoot downloaded from managing server; pars. 0037 & 0043, disk image downloaded from managing server);

parsing the plurality of data packets using a network protocol stack to receive the boot agent and the boot image during a pre-boot runtime of the processing system, wherein a portion of the network protocol stack is executed in a hardware entity of the processing system using one

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or more network protocol offload engines (pars. 0061-0064, using UDP/IP or other protocol stack);

transferring the plurality of data segments into system memory of the processing system during the pre-boot runtime (pars. 0026 & 0037, ActiveOS and disk image preferably stored in system memory); and

executing the boot agent (pars. 0030-0031).

While Miyamoto teaches executing a network protocol stack on resources such as a network card without loading the communication protocol onto the motherboard (pars. 0064-0067), Miyamoto does not expressly describe this as using one or more protocol offload engines. Boyd teaches using one or more protocol offload engines to relieve processor and memory resources (pars. 0006-0007). Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art that using one or more protocol offload engines is applicable to Miyamoto as a means to free processor resources.

Miyamoto does not expressly teach copying the boot image onto a hard drive of the processing system; resetting the processing system; and booting the processing system from the boot image copied to the hard drive. French teaches that software may be saved onto a local storage unit such as a hard drive, so that the target will have the ability to perform a local boot (col. 4, lines 39-51). At the time of invention in view of French, it would have been obvious to one of ordinary skill in the art that Miyamoto's boot image may be copied to a data storage unit, in order to allow local booting.

As per claim 15, Boyd teaches transferring data segments directly into system memory via RDMA (par. 0007).

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As per claims 16 and 17, Boyd teaches using a TCP/IP Offload Engine (par. 0007).

As per claim 18, Miyamoto teaches executing UDP/IP in the hardware entity (par. 0062)

As per claim 19, Boyd teaches pre-posting a buffer in the system memory of the processing system prior to receiving a first one of the plurality of data segments, the buffer having a size corresponding to a data block (pars. 0113 & 0114).

As per claim 20, Miyamoto teaches the boot agent contains instructions for the processing system to execute to determine what to do with the boot image (pars. 0039 & 0043).

As per claim 30, French teaches updating the boot image (col. 4, lines 52-64). Copying over a previous boot image currently stored onto a hard disk to install a new or different boot image is well known in the art.

As per claim 31, copying a boot image onto a blank or formatted hard disk is well known in the art.

As per claim 32, Miyamoto teaches a method, comprising:

receiving a boot agent and a boot image at a processing system via a network during a pre-boot runtime of the processing system within a plurality of data packets (par. 0021, data packets are inherently sent over digital networks; pars. 0035-0036, ActiveOS or OpBoot downloaded from managing server; pars. 0037 & 0043, disk image downloaded from managing server);

parsing the plurality of data packets using a network protocol stack to receive the boot agent and the boot image during the pre-boot runtime, wherein a portion of the network protocol

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stack is executed in a hardware entity of the processing (pars. 0061-0064, using UDP/IP or other protocol stack); and

executing the boot agent (pars. 0026 & 0030-0031).

While Miyamoto teaches executing a network protocol stack on resources such as a network card without loading the communication protocol onto the motherboard (pars. 0064-0067), Miyamoto does not expressly describe this as using one or more protocol offload engines. Boyd teaches using one or more protocol offload engines to relieve processor and memory resources (pars. 0006-0007). Thus, at the time of the invention, it would have been obvious to one of ordinary skill in the art that using one or more protocol offload engines is applicable to Miyamoto as a means to free processor resources.

Miyamoto does not expressly teach copying the boot image onto a hard drive of the processing system; resetting the processing system; and booting the processing system from the boot image copied to the hard drive. French teaches that software may be saved onto a local storage unit such as a hard drive, so that the target will have the ability to perform a local boot (col. 4, lines 39-51). At the time of invention in view of French, it would have been obvious to one of ordinary skill in the art that Miyamoto's boot image may be copied to a data storage unit, in order to allow local booting.

As per claim 33, Boyd teaches transferring data segments directly into system memory via RDMA (par. 0007).

As per claims 34 and 35, Boyd teaches using a TCP/IP Offload Engine (par. 0007).

As per claim 36, Miyamoto teaches executing UDP/IP in the hardware entity (par. 0062).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Wang whose telephone number is 571-272-3669. The examiner can normally be reached on M-F (9:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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CHUN CAO
PRIMARY EXAMINER